AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

Claim 1 (Previously presented): A method for the detection of a target nucleic acid molecule in a living cell, comprising:

a) exposing the target nucleic acid molecule to a first complementation molecule and a second complementation molecule, wherein the first complementation molecule comprises a first polypeptide portion coupled to a first probe portion, wherein the first probe portion binds to a first nucleic acid hybridization-site, and wherein the second complementation molecule comprises a second polypeptide portion coupled to a second probe portion, wherein the second probe portion binds to a second nucleic acid hybridization site, and wherein the first and second probe portions are nucleic acids or nucleic acid analogues, and wherein when the first and second probe portions hybridize to nucleic acid sites that are located in close proximity to each other, then the first and second polypeptide portions of the first and second complementation molecules interact and form an assembled complementation complex;

b) allowing the components to react under conditions that permit the formation of an assembled complementation complex; and

c) determining if an assembled complementation complex is present by any means which allows detection of the assembled complex but not the individual polypeptide portions; wherein the presence of an assembled complex shows the target nucleic acid in the living cell.

Claim 2 (Original): The method of claim 1, wherein the first and second polypeptides interact in the complementation complex to form an active enzyme.

Claim 3 (Original): The method of claim 1, wherein the first and second polypeptides interact in the complementation complex to form an assembled protein with detectable fluorogenic activity.

Claim 4 (Original): The method of claim 1, wherein the first and second polypeptides interact in the complementation complex to form an assembled protein which contains a discontinuous epitope, which may be detected by use of an antibody which specifically recognizes

the discontinuous epitope on the assembled protein but not the partial epitope present on either individual polypeptide.

Claim 5 (Original): The method of claim 1, wherein the target nucleic acid is detected in vivo or in vitro.

Claim 6 (Original): The method of claim 5, wherein the target nucleic acid is detected in vivo.

Claim 7 (Original): The method of claim 1, wherein the target nucleic acid is single-stranded or double-stranded.

Claim 8 (Original): The method of claim 2, wherein the active enzyme is detected by a chromogenic or fluorogenic reaction.

Claim 9 (Original): The method of claim 8, wherein the enzyme is dihydrofolate reductase or β-lactamase.

Claim 10 (Original): The method of claim 3, wherein the assembled protein is a fluorescent protein.

Claim 11 (Original): The method of claim 10, wherein the fluorescent protein is a natural, modified, or genetically engineered fluorescent protein.

Claim 12 (Original): The method of claim 11, wherein the fluorescent protein is selected from the group consisting of GFP, EGFP, CFP, YFP, and RFP.

Claim 13 (Canceled)

Claim 14 (Previously presented): The method of claim 1, wherein the first probe portion and the second probe portion are oligonucleotides.

Claim 15 (Canceled)

Claim 16 (Original): The method of claim 1, wherein the probe portion and the polypeptide portion of each complementation molecule is coupled by a flexible linker.

Claim 17 (Original): The method of claim 1, wherein the target nucleic acid is amplified prior to exposure to the first and second complementation molecules.

Claim 18 (Original): The method of claim 17, wherein the target nucleic acid is amplified using rolling circle amplification to generate a single-stranded DNA target with a multiplicity of the same hybridization sites.

Claim 19 (Original): The method of claim 1, wherein the first and the second probes bind to two adjacent sequences in the target nucleic acid.

Claim 20 (Previously presented): The method of claim 1, wherein the first and the second probes bind to the same sequence in the target nucleic acid to form a triplex, wherein the target nucleic acid sequence forms part of the triplex.

Claims 21(Previously presented): A kit for the detection of a target nucleic acid molecule in a living cell, wherein the kit comprises a vial containing a first complementation molecule and a vial containing a second complementation molecule, wherein the first complementation molecule comprises a first polypeptide portion coupled to a first probe portion, wherein the first probe portion binds to a first nucleic acid hybridization site of the target nucleic acid molecule in the living cell, and wherein the second complementation molecule comprises a second polypeptide portion coupled to a second probe portion, wherein the second probe portion binds to a second nucleic acid hybridization site of the target nucleic acid molecule in the living cell, and wherein the first and second probe portions are nucleic acids or nucleic acid analogues, and wherein when the first and second probe portions bind to nucleic acid sites that are located in close proximity to each other, then the first and second polypeptide portions of the first and second complementation molecules interact and form an assembled complementation complex when the target nucleic acid molecule in the living cell is exposed to the first and second complementation molecules.

Claim 22 (Original): The kit of claim 21, wherein the first and second polypeptides interact in the complementation complex to form an active enzyme.

Claim 23 (Original): The kit of claim 21, wherein the first and second polypeptides interact in the complementation complex to form an assembled protein with detectable fluorogenic activity.

Claim 24 (Original): The kit of claim 21, wherein the first and second polypeptides interact in the complementation complex to form an assembled protein which contains a discontinuous epitope, which may be detected by use of an antibody which specifically recognizes the discontinuous epitope on the assembled protein but not the partial epitope present on either individual polypeptide.

Claim 25 (Previously presented): The method of claim 1, wherein the living cell is *in vivo*.

Claim 26 (Previously presented): The method of claim 1, wherein the living cell is *in vitro*.

Claim 27 (Previously presented): The kit of claim 21, wherein the living cell is *in vivo*.

Claim 28 (Previously presented): The kit of claim 21, wherein the living cell is *in vitro*.